ABSTRACT

[1096] An integrated circuit that performs data demodulation on partially despread symbols includes a despreading unit, a channel compensation unit, and a symbol combiner. The despreading unit despreads input samples and provides despread symbols for a first code channel with a first spreading factor. The channel compensation unit multiplies the despread symbols with channel estimates and provides demodulated symbols. The symbol combiner combines groups of demodulated symbols to obtain recovered data symbols for a second code channel with a second spreading factor that is an integer multiple of the first spreading factor. The channel compensation and symbol combining are dependent on whether or not transmit diversity is used. For a TDM design, despread symbols for multiple first code channels are processed in a TDM manner, one channel at a time, to obtain recovered data symbols for multiple second code channels. The channel compensation unit and symbol combiner can be operated in a pipelined manner.